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ABSTRACT

A study examined the attitudes of distance education students in Queensland, Australia, toward the use of objectives underpinned by behaviorist theory in distance education programs. A 35-item questionnaire was mailed to all 600 of the University of Southern Queensland's distance education students. Usable surveys were returned from 287 students. About half the students stated that they refer to objectives at the beginning of each of their study sessions, and 61.9 percent claimed to read objectives when it is time to consider assessment items. Most students disagreed with the statement that objectives enhance their ability to learn to their full potential; however, 62.9 percent felt that objectives help measure their understanding of material studied. Most students (82.9 percent) felt that objectives are necessary in instructional materials, and 60.7 percent preferred having objectives distributed at the beginning, middle, and end of study materials instead of just at the beginning (which is the current practice). Even though there was no consensus on the type(s) of guides needed besides objectives, 70.1 percent of the students wanted other guides in addition to objectives. Further research with a larger and more diverse student population is recommended. (The survey student questionnaire is included. Contains 30 references.) (MN)

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An Investigation into Students' Disposition to the use of Objectives in Distance Learning Materials

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ABSTRACT

The use of learning objectives in study materials of external students is an instructional design strategy which is generally accepted. However, with the emergence of the constructivist paradigm in learning theory, there is the question as to whether the use of objectives, underpinned by behaviourist theory, is justified. This study was undertaken to investigate the distance education student's disposition towards objectives with particular reference to the way they used them and to what their perceptions and expectations were. Responses to a questionnaire revealed that objectives were perceived by the majority of the students samples as useful to their studies, and that objectives, for them, were an integral part of their learning strategy.

INTRODUCTION

One of the educational practices that has benefited tremendously from psychology and philosophy is instructional design. Instructional design in education is like what architecture is to the building industry. Instructional design is a highly valued and entrenched activity in distance learning material development.

The distinctive characteristics of distance education (Keegan, 1990) and the distance learner (Holmberg, 1989) demand that the expected outcomes of learning are predetermined and are dependent on an efficient and effective design of instructional materials often undertaken by a group or team using relevant ideas from learning theories.

According to Reigeluth (1983) instructional design is a prescriptive theory based upon descriptive theories of learning. Much of the work in instructional design in distance education is grounded in objectivism. Two probably false assumptions underpinning objectivism are that knowledge can be transmitted to, instead of constructed by, the learner and that all humans use essentially similar processes for learning. It needs to be said that instructional design is not ignorant or complacent about cognitive learning theories. Many of its principles such as elaboration theory, information processing, knowledge engineering, are based on them. And yet as succinctly put by Jonassen (1991):

> *Instructional design and technology begins with an objective world view, secure in the belief that the purpose of instruction is that of transfer agent, transferring objective information to learners. Perhaps the greatest epistemological concern about this assumption is that what is transferred to the student is learned by the student without interpretation or reconstruction.* (p. 11.)

The growth in cognitive psychology and the ferment within the new philosophical thinking of constructivism, seem to suggest that we are on the threshold of a significant major change in the learning theory foundation for instructional design (Bereiter, 1990). Indeed, Candy (1991) has strongly recommended that constructivism should be embraced as the new philosophy for distance education. Such a far-reaching paradigm shift in distance education necessarily requires that an empirical support for its proposition be ascertained from those being served by education. As a result there are three major questions we think need to be answered to provide categorical ingredients for determining the worth or otherwise of objectivism in the current philosophical and psychological climate. One of the questions to be answered is whether the long standing presumption in education that we can always control what the individual learns, is still welcomed by students.

One of the major practices that would be affected by the paradigm shift in the instructional design of distance education materials is the use of objectives. While discussing constructivism and distance education research, Jegede (1992) has stated that given all the characteristics of constructivism, it could be argued that it is not ideally possible to prescribe behaviours nor can learner behaviour be described as it actually is or should be. He then posits the question, 'is it really possible for instructional materials to specify learners' behaviour that could result from the sequence of learning activities?' (p.27). This to our mind constitutes the second question. Proponents of objectivism would however argue that most training is objectivistic because it supports explicit performance goals. Yet according to Jonassen (1991) instructional designers cannot impose a prescribed reality on learners because each learner will interpret that reality somewhat differently.

Tennyson's (1992) assessment of the behavioural paradigm is that it offers a clearly described model of learning while the cognitive paradigm is less clear due to the various formulations of competing cognitive learning theories. Given the validity of this assessment in the backdrop of presently scanty research studies into constructivism and instructional design strategies, the third question that could be asked is what justification do we have for throwing away 'the baby with the bath water'? That is, will the movement from objectivism (known) to constructivism (as yet unknown) as part of the major shift in instructional design without any robust empirical data be injurious to the educational processes we are striving to improve?

In chronological terms and with special reference to its influence on the educational scene, behaviourism which has ruled classroom practices for over a century, now seems to be challenged and even supplanted by constructivism. Glasersfeld (1988) believes that constructivism has been around since the time of Vico in 1710 but of course did not receive any serious attention until about a decade ago. A brief discussion on the historical antecedents of these two paradigms would help to situate the theoretical framework of this study as well as attempt to identify the differential applications of the two paradigms in instruction.

BACKGROUND

Behaviourism began as a direct result of the philosophical systems of associationism and empiricism. These philosophies dealt with 'memory',' imagination', 'abstraction',' consciousness', 'subjective idealism' (Boring, 1957) 'reality', 'truth', 'induction' and 'deduction' (Terhart, 1988). Notable among the psychologists within this philosophy is James Watson who rejected the mentalistic concepts of thought used in schools to explain and predict behaviour (Kratchowill & Bijou, 1987). Watson asserted that "all psychological phenomena are the result of observable events" and also that "all cognitive processes have a behavioural counterpart" (Walberg & Haertel, 1992 p.9). These marked the ontology of the new theory of learning called behaviourism which diverted the focus of educational psychologists and educationists toward objectivism in the 1950s.

The influence behaviourism exerted on educational psychology led to the blossoming of research studies to extend the tenets of this new theory of learning. Skinner's work on operant conditioning and the experimental analysis of behaviour stood out as the beacon of behaviourism(Skinner,1958)..

The work of Gagne (1965), Davies (1971) and Mager (1961) entrenched behaviourism into educational practices with the linking of behavioural objectives, hierarchical analyses and needs assessment to the Skinnerian principle. This further enhanced and legitimised the use of the taxonomy of educational objectives devised by Bloom and his associates (1956) in teaching and learning. All these were of utmost assistance in the global curriculum reform of the 50s and 60s initiated in the United States. Behaviourism and objectivism fell on very fertile soils of teacher education curricula, approaches to school curriculum and instruction, classroom management and educational evaluation which dominated the scene in the 50s and still persists to date.

Constructivism on the other hand has recently emerged as a paradigm diametrically opposed to behaviourism. It has roots in Immanuael Kant's rationalism which has formed the tenets of modern cognitive psychology as well as those of developmental psychology. Kant believed that 'memory is not simply a copy of sensory experience but the result of interpretation or transformation imposed by a priori categories' (Walberg & Haertel, 1992 p. 7). Some of these a priori categories are prior knowledge, social environment and the learner's active involvement in the learning process. Other psychologists and philosophers (Connant, 1947; Thorndike, 1921; Ausubel, 1963) began to look at learning theories from the angle of information processing as the basis for understanding complex human behaviour (Newell & Simon, 1972). This approach, based on metacognition, stresses meaningful learning.

Most constructivists believe that the work of Kelly (1950) and Piaget (1970) formed the foundation for modern views on the philosophy. Constructivism although relatively new and scantily studied, has received tremendous support from modern theories of learning (Jegede,

1991). Constructivism states that knowledge is actively constructed by the cognising object and the function of cognition is adaptive and serves the organisation of the experiential world, not the discovery of ontological reality (Glasersfeld, 1987; Wheatley, 1989; Driver, 1988).

The assumptions of objectivism are fundamentally different from those of constructivism (Jonassen, 1991). They both represent alternative conceptions of learning and cognition and contrast very sharply with regard to reality, mind, thought, meaning, symbols, etc., as excellently discussed by Jonassen, (1991). Behaviourism sees learning as synonymous with behavioural outcomes even where they could hardly explain behaviours of higher-order thinking. Constructivism sees learning as an active engagement of the learner dictated by what the learner already knows and how the knowledge is acquired. The greatest limitation of objectivism is the complete reliance on the observable events exhibited by the learner as a criterion to prove or disprove hypothesis. As stated by Novak (1988):

> *What behavioural psychology has ignored is that though the records may be unambiguously accurate, the guiding theory and principles could do little to help us interpret what the records mean. Behaviourism's failure has also been that it deals with events that have little consequence for human understanding.* (p. 81.)

The emergence of constructivism and its challenge of the old paradigm of behaviourism implies that educational psychologists begin to assess the value of cognitive psychology in a contemporary world. It implies, especially for curriculum and instruction, that educational practices might require a second look.

As a modest step in finding information to partially answer the above questions, this study investigated the disposition of distance learners to the role of instructional objectives in the study materials. In specific terms the study sought answers to the following:

1. Do instructional objectives in distance education materials provide any welcome guide to, or impose restrictions on, learning as opined by distance education students?

2. Is there any significant relationship between the moderator variables of distance learners (of gender, course of study, year of current enrolment, highest level of formal studies, last year of formal study prior to current course enrolment, and year of work experience in field directly related to current course) and their disposition to the inclusion of instructional objectives in study materials?

3. What use are learning objectives as instructional design tools in distance education materials?

DESIGN AND PROCEDURE

Sample

Using the systematic random sampling technique, 600 students were selected from the population of University of Southern Queensland distance education students. This represented 10% of the total student population of the University studying at a distance. 287 copies of the questionnaires were returned and found to be acceptable for analysis. In accordance with the desire to analyse the data to reveal any relationship between moderator variables and the students disposition to the inclusion of learning objectives in their study materials both the demographic data and the answers to the items in the questionnaire were coded for analysis. The descriptive characteristics of the total sample used for the analysis are as shown in Table 1.

Instrumentation

Data was collected using the Learning Objectives Questionnaire (LOQ) which was developed following a three-phase procedure. The first phase involved the generation of 50 items by the investigators over a period of four weeks to cover the following issues agreed upon as relevant to the study:

- how, if and when the students read objectives.
  Students were asked at what time in their study did they refer to the learning objectives, (if at all) and whether they read them repeatedly or at particular times eg. pre-assessment.
- how students used the objectives in their study.
  Students were asked to consider the purpose of objectives for them by responding to questions about the relationships of objectives to study guidance, measurement of understanding and motivation to study.
- how students perceived objectives were constructed.
  These questions asked for responses about the students' perceptions of why objectives were a part of their study materials. Aspects here included objectives as statements of expectations, as teaching/learning strategies and as study outlines.
- what students' expectations were regarding objectives.
  These questions asked the students to express what they expected objectives to do for them and how they would be presented.
- what the students' preferences were regarding objectives.
  Students were asked to respond regarding their preferences for the inclusion/exclusion of objectives, opportunity to set their own objectives, and their preference for other forms of study guides eg. concept maps, graphic organisers etc.

The second phase involved the face and construct validation of the items generated. These items, organised into a draft questionnaire, were validated by a panel consisting of experts from

the fields of distance education, research methodology, language/communication and education. The validators were asked to review the draft LOQ instrument according to:

- The appropriateness of the whole instrument in measuring, to a large extent, the issue of the inclusion of learning objectives in study materials;
- The relevancy of items for the subsections and for the whole instrument;
- The suitability of the questionnaire for use within distance education context (either from students' or educators' perspective);
- The clarity of the language and expression (ie. simple, appropriate and understandable); and
- The organisation of the lay out.

The validators were also given a free hand to annotate the document to:

- advise on items to be rejected, reconstructed or accepted as it is for inclusion in the final instrument
- provide alternative statements to any of the items found improperly constructed;
- edit the language or the construction of any items judged inappropriate; and
- suggest the rearrangement of any item within a subsection or a relocation to another subsection.

The third phase involved using the responses from the validation. 35 items which met with the approval of the panel of judges were selected for inclusion in the final questionnaire.

The questionnaire comprised three parts. The first section sought demographic information about the respondents. The second part contained the questionnaire items. The third section allowed for open ended responses by the students in the form of an invitation to add any general comments they may have, or to add other thoughts they had on the use of learning objectives in their study materials. All items in the first two sections were coded to facilitate statistical analysis.

The second section of the questionnaire elicited responses on a five-point Likert scale of 'Strongly Agree', 'Agree', 'Neutral', 'Disagree' and 'Strongly Disagree' (scored 5, 4 3, 2, 1 respectively for positive items; reverse scoring for negatively stated items). The students were instructed to indicate by a mark in a box, which answer reflected their disposition to each item. Factor analysis utilising principal axis factoring with orthogonal rotation using the varimax procedure on the data obtained from the sample yielded a five factor solution confirming the five sub-scales into which the 35 items were grouped. The five factors labelled as Read, Utility, Perceptions, Expectations, and Preferences accounted for 90.1 percent of the variance and displayed very high interscale correlation as shown in Table 2.The five factors labelled as sub-

scales exhibited subscale reliabilities ranging between 0.45 and 0.62 and an alpha-reliability of 0.68 for the entire instrument.

Examples are given below of questions asked from each of the five sub-scales.

Read

I read and reread the objectives frequently.

I read objectives when it is time to consider assessment items.

Utility

Objectives help guide my study.

Objectives help measure my understanding of the material.

Perceptions

Objectives are a statement of minimal expectations.

Objectives provide a general outline of the content.

Expectations

I expect objectives to motivate me towards my study.

I expect objectives to help me judge my understanding of the material.

Preferences

I like to have objectives at the beginning of my study book.

I would prefer other forms of guides (eg, graphic organisers, concept maps) to objectives.

Administration

The questionnaires were administered by mail. Before distribution, each questionnaire was identified by code to enable the investigators to monitor their return. Students were asked to return the completed questionnaire within a period of four weeks.

DATA ANALYSIS AND FINDINGS

Each student's response on the five-point Likert scale provided, was scored on each of the 35 items in the LOQ. A frequency analysis of the responses was performed (see Table 3) followed by a Zero-order correlation carried out for the subscales to reveal the strength of the relationship amongst them. For a comprehensive summary of the results of the frequency analysis the responses to 'Strongly Agree' and 'Agree' were combined as one. This was similarly done for 'Disagree' and Strongly Disagree'. Finally a comparison of the differences in the mean scores of the various subgroups within the sample was carried out using Analysis of Variance to reveal if there is any relationship between the variables and students disposition to the use of instructional objectives.

On the basis of the data analysis, the salient findings of this study, as contained in Tables 1-4, could be summarised as follows:

1. About half of the students who responded to the questionnaire claimed they refer to objectives at the beginning of each of their study sessions.
2. 61.9% of the respondents said they read objectives when it is time to consider assessment items. This response seem to correspond with those for item 11 in which 62.9% of the students are of the opinion that objectives help measure their understanding of the material they study.
3. Judging from the responses of the students to items 7 and 8, it appears that objectives serve very useful purposes especially in guiding their study.
4. The responses of the students to items 14 and 18 indicate that objectives are mainly statements of minimal expectations.
5. Most of the students disagreed that objectives enhance their ability to learn to their full potential (item 16).
6. 92.9% of the students expect objectives to specify goals that can be achieved (item 22) and expect the content to comprehensively relate to the objectives in the study books.
7. While 70.4% of the students would prefer not to set their own objectives (item 26), 82.9% think it is necessary to include objectives in instructional materials (item 29).
8. 70.1% of the respondents would prefer other guides in addition to objectives (item 30) but there is a mixed reaction about their preference of other forms of guides (eg graphic organiser, concept maps) (item 35).
9. 60.7% of the students would prefer to have objectives located at the beginning, during and at the end of the study materials as opposed to the current practice of having the objectives only at the beginning of the materials (item 33).
10. Five significant correlations (p. <01, p< .05) were observed among the subscales indicating strong internal consistency of the instrument.
11. The analysis of variance used comparing mean differences amongst the levels of the moderator variables indicated significant differences ($p<.01$) only for the variable of year of enrolment in current program. Further examination of the data through the application of the Scheffe multiple range test statistic indicated that the students enrolled in their third or later years of a program had significantly higher mean scores than the others. The interaction of the variables of 'years of work experience in the field directly related to current course' and 'years of current enrolment' also showed significant difference (Sum of Squares = 3681.91, Df =8, F-ratio = 3.55, $p<.01$).

DISCUSSION, IMPLICATIONS AND CONCLUSIONS

In this study, an attempt was made to initiate the process of clarifying the worth or otherwise of objectivism in the current philosophical and psychological climate and movement towards paradigm shift within distance education. The study sought answers to three main questions of (1) whether instructional objectives in distance education materials provide any welcome guide to, or impose restrictions on, learning as opined by distance education students, (2) if there are any significant relationships between the moderator variables of distance learners (of gender, course of study, year of current enrolment, highest level of formal studies, last year of formal study prior to current course enrolment, and year of work experience in field directly related to current course) and their disposition to the inclusion of instructional objectives in study materials, and (3) what the use are learning objectives as instructional design tools in distance education materials is.

Data from this study which addressed the first of the three main questions indicated that instructional objectives in distance learning materials serve a useful purpose of guiding students as they study. The results from the sample of students used in this study showed that students refer to objectives at the beginning of each of their study sessions, and use them especially when it is time to consider assessment items. However, the students sampled in this study also agree that objectives are mainly statements of minimal expectations (items 14 and 18). From the behaviourist point of view learners are expected to elicit certain types of response after studying a particular course materials. Hence the learners' use of objectives to guide study and consider assessment items are in order. The constructivists would want to question what students are supposed to learn and if they could be prescribed by way of objectives. According to this school of thought, responses to given concepts are difficult to determine as individuals have their own idiosyncratic way of learning and also their different perception of meanings from any given set of materials (Glasersfeld, 1987; Driver, 1988). If objectives represent minimal expectations of what is to be learned, how would the learner know explicitly the extent of what is to be learnt? To some this would only encourage a surface learning approach as opposed to the much desired deep learning approach (Marton, Dall'Alba, & Beaty, 1993). A question that would need to be resolved in this argument is, given the isolated environment in which the distance education student studies, whether some form of guidance would not be necessary. There could be a pointer here for a need to consider the use of a combination of aspects of objectivism and constructivism in the development of instructional materials. Evidently there is a need for further research in this area.

The results of the analysis of variance as shown in Table 4 addressed the second question of the study, viz. the relationships if any, between some moderator variables and the disposition of students to the use of instructional objectives in their study materials. The F-values in Table 4 show that except for the year of current enrolment in a course of study, no other variable showed any significant relationship ($p < .05$) with students disposition. In other words the

gender of the student, what course the student is enrolled in, the number of units currently being studied, etc., do not matter in relation to how they view instructional objectives in their study materials. What seemed to be significantly related is the year of current enrolment in which the results showed that the longer a student is enrolled in a course the more positive the inclusion of objectives are viewed. The interaction of this variable with years of work experience in field directly related to current course is significant ($p < .01$) as indicated in the section on Findings. This is not unexpected as the increase in the years of experience would have direct relationship with the years of enrolment for a student who remains in the program to its completion. One implication of this result could be that the longer a student stays on a program the less self-directed and motivated the student becomes. It may also be that students become to value the use of objectives more over time and are therefore more aware of their use. The consequence of this is the increased reliance on guidance as to what is to be learnt and possibly how to learn.

Of interest in this study was also the use of learning objectives as instructional design tools in distance education materials. The results of this study point to a number of issues. First is the fact that students are aware of the place of objectives in curriculum and instructional design. (items 15, 22, & 29). Secondly, that objectives do not motivate students towards study sessions (item 12), and also do not enhance students' ability to learn to their full potential (item 16). Thirdly, students would prefer other guides in addition to objectives (item 30) but have mixed reaction about their preference of the other forms of guides (item 35). Students' reaction to the first issue is a confirmation of how entrenched the behaviourist model has become in curriculum and instructional design. Students' disposition to the fact that objectives do not enhance their ability to learn to their full potential perhaps indicates that all behavioural processes do not have a cognitive counterpart and that learning goes beyond behavioural response (Walberg & Haertel, 1992). Students' acceptance of the need to have other forms of learning guides not only points to the need to re-examine the place of objectives but also to reinforce the need to incorporate meaningful learning based on metacognitive abilities of the learner to identify activities and strategies necessary for understanding and performing learning tasks (Brown, Campione & Day, 1981). Indeed, Morgan (1993) has called for the 'theorising of our practice' in distance education, and to ask critical questions about the content and pedagogy of our educational practices. Morgan in his argument for the use of constructivism discourages 'the return to behavioural objectives and the views of learning embodied in much of instructional technology which has been heavily influenced by behavioural psychology' (page 50).

It is not possible from a one short study like ours to categorically conclude one way or another about the issues raised in the study for at least a couple of reasons. The results found could have been an artefact of the design of the study. Also the results of this study point to a mixed disposition of the students to the use of instructional objectives in distance learning materials. There is a need to further clarify the issues pursued in this study, probably using a larger and more diverse sample of students. Replicating this study or looking at other aspects of it would therefore seem to be a logical follow up.

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TABLE 1 : Descriptive characteristics of the study sample.

Characteristics		n	Percentage
Gender :			
	Male	142	49.7%
	Female	144	50.3%
Course in which respondent was enrolled			
	Business	112	43%
	Education	42	16%
	Engineering	35	11%
	Cont.Educ.	35	11%
	Arts	8	3%
	App. Science	8	3%
	Info. Tech.	8	3%
Year of Current Enrolment:			
	First Year	115	42.3%
	Second Year	75	27.6%
	Third Year	82	30.1%
Number of units being studied in the current semester			
	1	74	26.1%
	2	157	55.3%
	3	52	18.3%
	more	1	0.3%
Highest Level of formal studies prior to enrolling in present course			
	Junior High School	24	8.4%
	Senior High School	105	36.6%
	Assoc. Diploma	31	10.8%
	Degree	44	15.3%
	Certificate	36	12.5%
Last year of formal study prior to current course enrolment:			
	Before 1970	24	7.1%
	1971 - 1979	54	15.6%
	1980 - 1989	163	62.6%
	1990 onwards	52	14.9%
Years of work experience in field directly related to current course:			
	less than 5 years	52.6	150%
	5 - 10 years	76	26.7%
	11 - 15 years	35	12.3%
	16 - years	12	4.2%
	more than 20 years	12	4.2%

TABLE 2: Zero-order correlations of the sub-scales within the LOQ instrument.

	Perception	Preference	Read	Utility	Expectations
Perception	-				
Preference	0.14	-			
Read	0.08	0.08	-		
Utility	0.25**	0.01	0.13	-	
Expectations	0.20**	0.16**	0.81	0.29*	-

** p = < 0.01 * p = < 0.05

TABLE 3 : Frequency distribution of students' responses to the Learning Objectives Questionnaire.

	Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	I read objectives in my study books only when I first receive the study materials.	40 14.0%	86 30.1%	21 7.3%	101 35.3%	38 13.3%
2	I read and reread the objectives frequently	24 8.4%	85 29.8%	34 11.9%	104 36.5%	38 13.3%
3	I refer to objectives at the beginning of each of my study sessions	37 13.0%	106 37.25	23 8.1%	81 28.4%	38 13.3%
4	I read objectives only because they are part of my study notes	16 5.6%	73 25.5%	36 12.6%	118 41.3%	43 15.0%
5	I read objectives when it is time to consider assessment items	49 17.1%	128 44.8%	25 8.7%	63 22.0%	20 7.0%
6	I don't particularly read the objectives at all	16 5.6%	22 7.7%	29 10.1%	111 38.8%	107 37.4%
7	Objectives help guide my study	51 17.8%	121 42.3%	67 23.4%	35 12.2%	12 4.2%
8	Objectives serve no useful purpose in my studies	10 3.5%	23 8.0%	43 15.0%	108 37.8%	102 35.7%
9	Objectives outline what is required by lecturers	43 15.0%	158 55.2%	50 17.5%	23 8.0%	11 3.8%
10	Objectives restrict my learning	2 0.7%	7 2.4%	43 15.0%	152 53.1%	82 28.7%
11	Objectives help measure my understanding of the material	28 9.8%	152 53.1%	67 23.4%	34 11.9%1.	5 7%
12	Objectives help my motivation towards study sessions	9 3.2%	83 29.1%	93 32.6%	81 28.4%	19 6.7%
13	Objectives serve as teaching/learning strategy	25 8.7%	159 55.6%	62 21.7%	34 11.9%2.	6 1%
14	Objectives are a statement of minimal expectations	11 3.9%	114 40.0%	92 32.3%	47 16.5%	21 7.4%
15	Objectives provide a general outline of the content	38 13.3%	201 70.3%	29 10.1%	14 4.9%	4 1.4%
16	Objectives enhance my ability to learn to my full potential	6 2.1%	87 30.5%	109 38.2%	72 25.3%	11 3.9%
17	Objectives are for lecturers, not for students	5 1.8%	23 8.1%	38 13.3%	167 58.6%	51 17.9%
18	Objectives are guidelines to maximum performance	15 5.2%	87 30.4%	91 31.8%	81 28.3%	12 4.2%
19	Objectives are hurdles to be crossed	12 4.2%	87 30.3%	60 20.9	104 36.2%	22 7.7%
20	I expect learning objectives to be stated at the beginning of my study materials	73 25.7%	165 58.1%	27 9.5%	17 6.0%	2 0.7%
21	I expect objectives to specify goals that can be achieved	65 22.7%	174 60.8%	30 10.5%	15 5.2%	1 0.3%

22	I expect content to comprehensively relate to the objectives in the study book	97 34.0%	168 58.9%	15 5.3%	3 1.1%	1 0.4%
23	I expect objectives to help me judge my understanding of the material	68 23.8%	170 59.4%	29 10.1%	18 6.3%	1 0.3%
24	I expect objectives to motivate me towards my study	39 13.6%	88 30.8%	82 28.6%	67 23.4%	10 3.5%
25	I expect objectives to be written in terms of specific student performance or competencies	46 16.1%	138 48.3%	67 23.4%	26 9.1%	7 2.4%
26	I would prefer to set my own objectives for the units I am studying	6 2.1%	18 6.3%	60 21.1%	142 50.0%	58 20.4%
27	I would prefer not to have objectives in my study book	1 0.3%	9 3.1%	38 13.2%	137 47.7%	101 35.2%
28	I particularly like objectives	30 10.5%	125 43.6%	105 36.6%	20 7.0%	5 1.7%
29	It is necessary to include objectives in instructional materials	64 22.3%	174 60.6%	37 12.9%	9 3.1%	2 0.7%
30	I would prefer other guides in addition to objectives	63 22.0%	138 48.1%	69 24.0%	14 4.9%	2 0.7%
31	I like to have objectives only at the beginning of the study book	6 2.1%	51 17.8%	99 34.5%	100 34.8%	30 10.5%
32	Objectives are most useful if placed at the end of my study book	1 0.3%	15 5.2%	81 28.2%	130 45.3%	58 20.2%
33	I like objectives to be located at the beginning, during and at the end of my study book	47 16.4%	127 44.3%	66 23.0%	42 14.6%	4 1.4%
34	I should be allowed to set my objectives as I progress through the various parts of my study book	2 0.7%	30 10.5%	105 36.6%	119 41.5%	30 10.5%
35	I would prefer other forms of guides (e.g. graphic organiser, concept maps) to objectives	21 7.3%	61 21.3%	125 43.6%	69 24.0%	9 3.1%

TABLE 4: Summary of ANOVA comparing the means of the different levels of the moderator variables on students' disposition towards instructional objectives.

Variables	Sum of Squares	D F	Mean Square	F
Gender(Male/Female)	0002.31	1	002.31	0.02
Units(1/2/3)	0156.02	2	078.01	0.55
Work Experience	1114 15	4	278.54	1.99
Years Prior	0112.98	3	037.66	0.26
Years Enrolled	1681.70	2	840.85	5.96 *
Course	1242.00	6	207.00	1.55
Highest formal education	0408.67	6	068.11	0.82

* significant $p < 0.05$